JPRS 75646

7 May 1980

USSR Report

AGRICULTURE

No. 1232

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WORK PROGRESS, PROBLEMS IN BELORUSSIA

Minsk SEL'SKAYA GAZETA in Russian 20 Feb 80 p 1

[Article by F. Sen'ko, Minister of Agriculture of the BSSR: "A High Degree of Readiness for Spring Sowing"]

[Excerpts] A great deal is being done in kolkhozes and sovkhozes in order to meet the planned goals. Concerned directors have fully completed the cleaning of seed, the repair of technology. The shipment of organic fertilizers is proceeding at full speed. A great deal of attention is being given to the preparation and retraining of cadres of machine operators, link leaders, brigade leaders and directors of production sections.

At the same time there are serious shortcomings and violations in the preparations for spring sowing. Many kolkhozes, sovkhozes and even rayons are lagging with their preparations of technology and seeds. They are overlooking possibilities for the maximal accumulation and shipment of composts. It is essential for the republic's farms to move 60 million tons of organic fertilizers into the fields for spring sowing. As of 12 February 70 percent of the total plan were moved out. At the same time, in Gantsevichskiy, Luninetskiy, Dubrovenskiy, Lel'chitskiy, Loyevskiy, Petrikovskiy, Zel'venskiy, Oshmyanskiy, Borisovskiy, Logoyskiy, Slutskiy and Chervenskiy rayons this goal was fulfilled by only 37-53 percent. The goal is underfulfilled in all of the rayons of Mogilevskaya Oblast.

In the Shatsk Sovkhoz of Pukhovichskiy Rayon, Barats'bit of Starodorozhskiy Rayon and the Kolkhoz imeni Kirov of Dzerzhinskiy Rayon peat is taken into the fields in pure form. This is the grossest violation of technology. In a number of enterprises the recommended ratio of manure to peat is not maintained or they are poorly mixed. A peat cushion is not placed under clamps.

Recently a large amount of ammonia water has been arriving in the republic. However, because of the shortage of reception facilities or because of the unsatisfactory shipments to enterprises in a number of rayons, a critical situation has developed regarding the unloading of cars. Since the beginning of the year alone 97 tank cars of ammonia water have been held up during unloading. Work is especially unsatisfactory in the enterprises of Zhlobinskiy, Braslavskiy, Smolevichskiy, Myadel'skiy, Shklovskiy, Mogilevskiy and other rayons. Individual agricultural administrations of rayon executive committees are not rendering effective aid to agrochemical associations for shipping ammonia water to kolkhozes and sovkhozes and for finding storage facilities for it. In many enterprises facilities simply have not been repaired.

Time does not wait. It is a priority goal for the directors and specialists of kolkhozes and sovkhozes and agricultural administrations to accelerate the work on the procurement of fertilizer. Not a single hectare of spring crops should be sown on unfertilized soil.

For spring sowing the republic's kolkhozes and sovkhozes are fully supplied with seeds of spring grains and pulse crops. Of the total stored grain 64.5 percent is of the first-class sowing standard. Of this, 71.4 percent will be sown for grain. The quality of seed is poorer in Vitebskaya Oblast, where only 45.1 percent of the seed is first class.

This year the readiness of all types of machines in the republic is greater than last year. As operational data and the results of examinations demonstrate, the repair of sowing and soil-cultivation machines has been completed everywhere. Our goal now is to organize the careful examination of repair quality in each enterprise, to eliminate problem areas efficiently and to complete technical adjustments of all machinery.

In addition to strengthening organizational work to ship out fertilizers and to prepare seeds and technology, the directors and specialists of kolkhozes and sovkhozes and of agricultural administrations must realize a complex of organizational-technological measures directed at raising the productivity and growth of gross yield of agricultural crops, especially grain.

This year it will be possible to increase barley crops of the highly productive varieties such as Mami and Nadya, oats of the Kondor variety, lupine of the Akademicheskiy variety and buckwheat of the Iskra variety. As much barley, oats and spring wheat as possible should be sown after intertilled, pulse crops and other good predecessors. It is mandatory to apply organic fertilizers when sowing grain crops on stubble predecessors. All of the possibilities exist for sowing barley on neutral or previously limed soils.

It is essential to radically alter the attitude toward cultivating buckwheat. From year to year enterprises do not fulfill plans for the procurement of this crop, do not supply themselves with seeds and secure a very low productivity.

In the interest of generally increasing the production of vegetable protein it is necessary not only to raise productivity but also to significantly expand pulse crops. The experience of leading kolkhozes and sovkhozes indicates that in Gomel'skaya, Brestskaya and the southern rayons of Grodnenskaya, Minskaya and Mogilevskaya oblasts it is possible to produce large yields of grain from feed lupine.

The largest areas of spring vetch should be sown in the northern and central parts of the republic, although this does not exclude the possibility of cultivating it successfully in other zones as well. Peas and maple peas should be planted everywhere on more compact and fertile soils.

Specific measures must be elaborated in each kolkhoz regarding the strengthening of the feed base and the production of large yields of potatoes, flax, sugar beets and vegetables.

Preliminary accounts of the availability of tractor and machine operators in kolkhozes and sovkhozes for the period of spring operations shows that for two-shift technological operations there is a shortage of over 31,000 persons. Consequently, we must immediately deal with the problem of machine operators by means of technical training. We must significantly raise the productivity of technology and on this basis to achieve the further growth of the level of mechanization of production processes, to decrease the schedule and raise the quality of field work.

The republic has the appropriate experience. It is important to utilize it everywhere. First of all there should be an organization of the fight for the rational utilization of work time by each unit and each machine operator. In one case it would be necessary to bring order to assigning machines to units, in another--to servicing them, and in a third--to introducing the group-operation of technology.

Practice shows the high effectiveness of organizing technical services for machine-tractor units during the intensive period of field operations during the nighttime through the efforts of master-repairmen, as is done in some enterprises of Berezovskiy, Braginskiy, Grodnenskiy and other rayons. It is essential to more actively move toward this type of service.

Model preparations for spring sowing, completing operations at the optimal time and on a high agrotechnical level--this is a dependable guarantee for producing large yields.

8228
CSO: 1824

WORK PROGRESS IN BELORUSSIA

Minsk SEL'SKAYA GAZETA in Russian 26 Mar 80 p 1

[Article: "The Snow is Still White in the Fields"]

[Text] The kolkhozes and sovkhozes of Belorussia are completing the procurement of the planned volume of organic fertilizers for the spring sowing. Over 50 million tons, or about 90 percent, have already been taken into the fields.

We know that sod-podzol soils prevail in the republic. The content of organic matter, which determines the fertility of the soil to a significant degree, is insufficient in them. This is why the basic condition for the intensive development of farming is the introduction of organics into the soil. It has been decided that beginning with this year's spring sowing about 40 percent of the annual volume will be applied in the spring to grains. No fewer than 21 tons of high-quality compost will be procured for each hectare of spring crops.

The progressive experience of the Osnezhitskiy Kolkhoz of Pinskiy Rayon, the Kolkhoz imeni Gastello of Minskiy, the Svetlyy Put' of Molodechnenskiy and the Progress of Grodnenskiy rayons should be utilized. Here last year, a dry one, 40-50 quintals of grain per hectare were produced. From year to year the doses of fertilizers in the soil are increased and the general quality of farming is improved.

This year the pace of shipments of organic fertilizer significantly surpasses that of last year. The operations schedule is being overfulfilled by all oblasts. It is characteristic that the farmers of Vitebskaya Oblast, where the soil is poorest in productivity, applied over 40 percent more organic fertilizers than during the same period last year.

The grain farmers of the republic have decided to produce 32 quintals of grain per hectare this year, as planned by our socialist obligations.

8228
CSO: 1824

LIVESTOCK FEED PROCUREMENT

LIVESTOCK FEED PROBLEMS IN LATVIA AIRED

[Editorial Report] In Riga SOVETSKAYA LATVIYA in Russian 11, 12 March 1980, pages 1, 2, an editorial and article bear on livestock feed problems in Latvia. An editorial on the importance of communists exhibiting initiative and leadership qualities states that, "During the present stall maintenance period, when many farms are experiencing a lack of forage, success in the overwintering period depends to a decisive degree on the effective utilization of existing feed.... Party members should also be concerned with augmentation of forage supplies by laying in pine needles, pine meal, twigs and the utilization of food scraps."

This is followed the next day by a thousand-word article by M. Beker, aimed in part at those involved in animal husbandry in Latvia. The author cites the need for harmonious proportional development in plant raising and animal husbandry. A major point then follows:

"In Latvia during the recent five-year plans a well known disproportion has grown up between the development of animal husbandry and the production of protein additives. For this reason the average protein content has dropped somewhat and the overall deficit now amounts to about 65,000 tons. However, the protein problem should not be seen as one of quantity alone. For fast growth of the organism and high livestock productivity feed protein should be of high quality, i.e., balanced in all unsubstituted amino acids, which are not synthesized within the organism and must be given with the feed.

"...If 1 kilogram of lysine is lacking per ton of concentrated feed, livestock growth is decreased by 15 to 20 percent and the expenditure of feed is increased by that magnitude per unit of production."

The remainder of the article is devoted to the work of the Institute of Microbiology imeni August Kirchenstein in enriching livestock feed.

CSO: 1824

SPECIAL FEED GATHERING MEASURES CONTINUE IN BELORUSSIA

[Editorial Report] In Moscow SEL'SKAYA ZHIZN' in Russian 18 March 1980, page 1, an article by V. Legan'kov relates the story of the success of Cherikovskiy Rayon (Mogilevskaya Oblast) in overcoming adverse conditions. The lands there suffered severely from the drought and the kolkhozes and sovkhozes were able to lay in only 10 quintals of feed units per head of cattle. Supplies of concentrates amounted to only 27 percent of that required. Yet the rayon successfully fulfilled its plan for sales to the state of meat and milk by resorting to broad utilization of supplementary sources of feed. More than 2 quintals of feed units per head of cattle were laid in in the summer and fall from forest, swamp and waste lands. Production of coniferous paste was organized from the beginning of the stall maintenance period. Utilization of incinerated scraps from the pine forest expanded feed supplies by 1 to 1.5 quintals of feed units per head of cattle. The remainder of the article goes on to report on the spread of Cherikovskiy Rayon's experience throughout Mogilevskaya Oblast and to other oblasts.

For public and private sector cattle in Belorussia about 11 million tons of additional feed, or over 1 million tons of feed units, have been laid in. The forestry organs have rendered much help in augmenting feed supplies. Even if the field and the meadow are the primary feed base for the livestock farm, the forest lands are a solid support.

CSO: 1824

BRIEFS

USE OF CATTLE BYPRODUCTS--In Minsk SEL'SKAYA GAZETA in Russian 18 April 1980, page 2, an article urges greater use of "kanyga" (contents of the cattle paunch) in swine rations. Meat combines in Belorussia processing large horned cattle delivered for slaughter get 80,000 tons of kanyga a year. The article cites kanyga's nutrient value "...10-25 percent dry matter and [illegible] 10 percent protein, many vitamins, including B_{12}, which is found only in feeds of livestock origin." It may be fed in a variety of modes and stored by a variety of methods. The prime cost of a quintal of flour made from kanyga amounts to 2 rubles 62 kopecks, while that of 100 feed units is 5 rubles 90 kopecks. A feed unit of kanyga is half as expensive as the average feed used in swine raising in Belorussia. The authors, Z. Gil'man and Ye. Kovalenok, lament that while in the GDR kanyga is used as a component in protein mixed feeds and in Bulgaria yeast is grown in kanyga, the meat combines in Belorussia continue to send it to the dump. This must stop altogether, especially in light of this year's feed deficit. [Editorial Report]

CSO: 1824

COMMUNIST PARTY'S AGRICULTURAL POLICY PRAISED

Kiev SIL'S'KI VISTI in Ukrainian 23 Mar 80 p 1

/SIL'S'KI VISTI Editorial on agricultural policy in light of 1965 CPSU Plenum: "An Adjusted Course"/

/Text/ One of the first legislative acts of Soviet power was the Decree on Land. At the suggestion of Vladimir Il'ich Lenin, it was approved by the 2nd Soviet Congress immediately after the victory of the Great October socialist revolution. The land became the property of all people, it was turned over to those who work it. This was the beginning of the liberation of the largest working class - the peasantry. Lenin, the creator of the communist party and the first socialist state in the world, studied the life of the popular masses thoroughly. He knew and understood, as no one else, the working peasants and their needs. Then, the genius of this popular leader determined the ways to a substantive reorganization of agriculture on a socialist basis. The creation, strengthening and development of kolkhozes is a living, practical application of Lenin's cooperative plan, and Lenin's teachings on agrarian problems, which fully survived the trials of time, were and remain the strength of the CPSU.

"Lenin's party, for the first time in ages, in fact liberated the peasants from exploitation and suffering, united it with socialism," remarked the CC CPSU General Secretary, comrade L.I. Brezhnev. "Our enemies invented quite a few tales about the past and present of the Soviet village. But whatever they say and write, the history of the 20th century, the heroic path of Soviet peasantry, and also the path of peasants in other socialist countries, have definitely proved that there is only one correct and just way to solve the peasant problem - the road of building socialism in the village; there is only one true teaching - Marxist-Leninist teaching on agrarian-peasant problems".

Agrarian policies are an important component of the general political course of the party. The CPSU devoted and devotes much attention to agriculture. An increase in kolkhoz and sovkhoz production is a vital goal in building communism. Our present agrarian policies are based on Lenin's strategy and party tactics in agriculture under socialism. They begin with the March (1965) CC CPSU Plenum which reviewed very important matters - measures for further development of the country's agriculture. Comrade L. I. Brezhnev gave a report on this matter. The Plenum thoroughly analyzed the growing needs of the socialist society, the situation in agriculture, found the hindrances to its development, pointed the ways toward improvement, applied new measures to branch management, and laid the foundations for complex solutions of prepared goals.

The party feels that two related goals must be achieved; the country must be supplied with provisions and agricultural raw materials, and the material and cultural living conditions of cities and villages must be moved closer together. With Lenin's principles in mind, the CPSU considers cooperation as a form which grows continuously and acquires new meaning in a communist environment. The growth of specialization and agricultural production concentration on the basis of inter-farm cooperation and agro-industrial integration is a vivid example of this.

Kolkhozes and sovkhozes enter freely into a wide cooperative effort, forming jointly high-quality commodity enterprises and industrial type associations. Contact between agricultural and industrial enterprises is also expanding, agro-industrial complexes are established.

Because of consistent plan realization, determined by the March (1965) CC CPSU Plenum, and follow-up by party congresses and CC Plenums, the country's agriculture is turning into a highly-developed sector of socialist economy. Work productivity in kolkhozes and sovkhozes is increasing. Between 1976-1979 the average yearly extent of branch gross production increased, compared to the index used prior to the March (1965) CC CPSU Plenum, by one and a half times, with a grain production, sugar beet and meat increase of 1.6 times, milk - 1.4 times, and eggs - 2.1 times.

The following data further confirm the agrarian sector growth in our republic. Basic agricultural enterprise production funds at the beginning of 1980 increased compared to 1964 by 5.7 times. The number of tractors increased from 257 thousand in 1965 to 406 thousand in 1979, grain harvesting combines from

57 thousand to 88 thousand. Much attention is paid to chemical treatment and land reclamation. The average yearly extent of the gross agricultural and livestock raising production for 1965-1979 increased to 9.8 billion karb. or 1.6 times compared to a similar period prior to the March (1965) CC CPSU Plenum.

Economic kolkhoz and sovkhoz strengthening contributed much to the social development of the village. The cultural living conditions in the village are moving closer to city life.

The July (1978) CC CPSU Plenum was an important landmark in the life of the party and the whole Soviet nation. It outlined a new, extensive program which provides a creative development of the course towards quality change in all agricultural production. The Plenum stressed that interfarm specialization and intensification are the ways towards further agricultural industrialization, and to an increase in all types of field and farm production. Honoring the 110th anniversary of Lenin's birth, and marking the 15th year since the March (1965) CC CPSU Plenum, rural workers under the leadership of party organizations, are working even harder to obtain abundant harvests, increase livestock productivity, lowering production prime cost, to successfully fulfill the plans for social-economic development. Party organizations and Soviet and agricultural organs are called to provide opportunities for every kolkhoz and sovkhoz worker to work at his best. Ideological, political-educational work in the village must also be improved. Its important area is to explain Lenin's agrarian policies of the CPSU, to make sure that each worker understands them with his intellect and heart. This will favor successful fulfillment of CPSU agricultural objectives.

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CSO: 1811

AGRICULTURAL GOALS IN BELORUSSIA

Minsk SEL'SKAYA GAZETA in Russian 14 Mar 80 p 3

[Article of speech by A. N. Aksenov, Chairman of the BSSR Council of Ministers, made 12 March in Minsk at a republic conference of party, soviet, trade union and komsomol aktivs and labor collectives: "Speech of Comrade A. N. Aksenov"]

[Excerpts] Comrades! Extensive and incomparably more complex tasks await solutions this year in the area of agricultural production.

In order to successfully complete these tasks it is especially important to eliminate the lags of many kolkhozes and sovkhozes this year. After all, last year there were about 250 enterprises with a grains productivity of up to 8 quintals, including 61 in Vitebskaya Oblast, 105 in Gomel'skaya Oblast and 75 in Mogilevskaya Oblast. The productivity of potatoes in 136 kolkhozes and sovkhozes was not more than 100 quintals per hectare. There was decreased milk production in Shklovskiy, Mstislavskiy, Postavskiy, Khotimskiy, Kostyukovichskiy and Krasnopol'skiy rayons and decreased meat production in Uzdenskiy, Pruzhanskiy, Pukhovichskiy, Logoyskiy, Checherskiy and Iv'yevskiy rayons. The directors and specialists of these rayons and enterprises must draw serious conclusions from last year's schedules and do everything possible to correct the situation this year.

At the present time village workers are faced with two priority tasks that cannot be put off--the organized conclusion of overwintering of livestock and the completion of all preparations for spring sowing. To a certain degree this will affect the success of our work in agriculture during the final year of the five-year plan.

It should be noted that the overwintering of animals is proceeding in extremely tense conditions. This is related not only to the limited feed resources. As recent investigations have demonstrated, in a number of kolkhozes and sovkhozes even the existing feeds are utilized inefficiently and the care for livestock has been poorly organized. Still before us is almost half of the stall-upkeep period, and the more responsible and difficult at that. We must double and triple efforts to eliminate existing difficulties, to decisively eliminate shortcomings in the upkeep of livestock and to fully utilize all existing feed-preparation technology. There should not be even a single case in which feed is given to animals without preliminary preparations, without crushing and enrichment with supplements. It is essential to continue to persistently seek additional feed resources in the future.

During this responsible period in livestock farming party, soviet and agricultural organs must strengthen controls even more over the course of over-wintering in each kolkhoz and sovkhoz. It is essential to do everything possible to preserve the herd, to increase its productivity, and to fulfill the plans for the producation and sale to the state of milk and meat by all enterprises.

Each day brings us closer to the start of spring field operations and preparations for this are more active than last year. Nevertheless, in many enterprises the repair of equipment still has not been completed, the preparation of seeds has not been finished, there is a poor organization of transporting organic fertilizers into the fields, and there is a shortage of mechanized cadres.

Time does not wait! It is essential to eliminate existing shortcomings immediately and to secure the complete preparations for spring sowing as the most important stage in the fight for this year's harvest.

A key goal in the area of agriculture remains the creation of a stable feed base, providing the required volume of full-value feeds for public livestock farming and for livestock that is the private property of citizens. The BSSR Ministry of Agriculture, local soviet and agricultural organs and the directors and specialists of enterprises must now, without losing a single day, carry out the most active preparatory work directed at the unconditional fulfillment of production plans and feed procurement plans during the current year.

Special attention must be given to raising the productivity of feed crops and to expanding the area in protein-rich crops such as alfalfa, clover, lupine, vetch and others. We must make optimal use of all possibilities and all sources for accumulating feeds in order to produce no fewer than 36 quintals of feed units per standard head of livestock this year.

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CSO: 1824

REGIONAL DEVELOPMENT

PERSPECTIVES, ACHIEVEMENTS OF UKRAINIAN AGRICULTURE SUMMARIZED

Kiev SIL'S'KI VISTI in Ukrainian 18 Mar 80 p 2

[Article by V. Popov, deputy chairman, UkrSSR Gosplan: "On a Course of Intensification"]

[Text] Agriculture is a vital branch of our economy. The production and industrial commodities made of agricultural raw materials add up to almost three-fourths of the country's national consumption fund. Today agriculture and industry which utilizes agricultural raw material provide almost a third of the national income, utilize a fifth of the production funds and employ a fourth of the working force.

The party pays a lot of attention to all the phases of socialist agricultural production development. A special contribution to the development of basic agrarian policies was made by the March (1965) CC CPSU Plenum, fifteen years ago.

The Plenum's historical merit lies in its fresh approach to agricultural management and in the evaluation of its role, its disclosure of branch problems which developed, and its analysis of the shortcomings. The Plenum provided ways for further agricultural development, indicated a course towards strengthening kolkhoz and sovkhoz economy.

The problem of accelerating agricultural development, as stressed in the party decisions, is not simply a farming problem, but a great political, party and state matter. The interests of the Soviet people, the interests of communism demand, said Comrade L. I. Brezhnev, that we have not only a powerful industry, but also a highly-developed agricultural production, capable of satisfying the growing needs of the population in food products, and raw materials for the industry. Establishing the goal of an all-around, consistent agricultural production intensification, the party determined a distinct system of measures directed towards the realization of the projected course. First among these measures is the strengthening of the kolkhoz and sovkhoz material-technical basis, adding complex mechanized production processes, agricultural chemization and land reclamation, and also specialization in agricultural production.

Considering the country's raised economic development, the party and the state decided that it was essential to reapportion the national income in favor of agriculture and to increase the capital investment in this branch.

Following the course established by the March (1965) CC CPSU Plenum, the agriculture of our country developed markedly during the last fifteen years.

In the 1965-1979 period, 57.5 billion karb. of state and kolkhoz capital investments were appropriated for the republic's agricultural development, 3.9 times more than in the previous fifteen year period.

The republic's agriculture continues to be equipped with new, powerful, highly-productive technology. The number of tractors increased from 257 thousand in 1965 to 406 thousand in 1979, or 1.5 times; grain-harvesting combines correspondingly from 57 to 88 thousand or 1.5 times; trucks from 203 to 380 thousand, or 1.8 times.

In this period the basic production funds of agricultural enterprises compared to 1964 increased 3.7 times and amounted to 38.5 billion karb. in the beginning of 1980.

Farm energy power rose correspondingly from 37.6 to 105 million horsepower, and the energy equipment of each worker increased 3.7 times; this provided for a marked work productivity increase of kolkhoz and sovkhoz workers.

Manual work losses in plant raising were reduced considerably. The mechanization level of corn raising for seed increased from 58 to 98 percent, sugar beets correspondingly from 32 to 95, potatoes from 20 to 90, sunflower from 65 to 99 percent.

At the May (1966) CC CPSU Plenum, on the initiative of comrade L. I. Brezhnev, a long-range system of land reclamation was developed, one of the main factors in obtaining stable, high yields regardless of climatic conditions. During 1966-1979, 5.7 billion karb. of state capital investments were directed towards this purpose, or 24 percent of the overall agricultural investment for this period. The irrigated area increased from 0.54 to almost 2.5 million hectares, or 3.7 times; drained areas from 1.37 to 2.45 million hectares, or 1.8 times in comparison to a similar period prior to the March (1965) CC CPSU Plenum.

Chemization has assumed an important place in the increase of agricultural production. The party and state contributed much to the development of chemical industry. Supplies of mineral fertilizers to the republic's farms increased from 5.5 million tons in 1965 to 16.5 million tons in 1979, or have increased three times.

The republic's agro-chemical service organization is getting better. According to the July (1978) CC CPSU Plenum decisions, last year a single agro-chemical service ("Ukrsil'hoskhimiya") was created within the agricultural organ system, which will provide for more effective use of all chemization measures.

The July (1978) and November (1979) CC CPSU Plenums paid particular attention to the agricultural production quality increase, and a reduction of its storage losses. For this reason, granaries, and vegetable and fruit storehouses will soon be put into effect in all procurement organizations, organizations for state and cooperative trade, in kolkhozes and sovkhozes to provide for the necessary amount of grain, vegetables, potatoes and fruit kept on farms.

A lot of attention is paid in the republic to the problem of further specialization development, the growth of interfarm cooperation, increasing agricultural production concentration, and converting it to an industrial basis. Zonal specialization is being improved, concentration of agricultural crop production is being realized. There are large production zones of commercial grain, rice, sugar beets, fiber flax, hops, potatoes and grapes. Around large cities and industrial centers there are intensive production zones of vegetables, early potatoes, milk, eggs, meat and poultry.

Interfarm specialization and agro-industrial integration are growing also. At the beginning of 1980, there were more than 3.5 thousand active interfarm production enterprises, organizations and associations in the republic, of them 788 in agricultural production, 714 in servicing agricultural production. 311 agrarian-industrial establishments were formed, among them 51 agrarian-industrial and 6 scientific-production associations.

Analyzing the results of the past fifteen year period, it may be said that the level of agricultural development in the Ukrainian SSR has risen considerably. It is confidently turning into a highly developed sector of socialist economy.

It should be especially noted that the extent of plant and livestock raising production has been much expanded. Gross average yearly extent of agricultural and livestock raising production for 1965-1979 increased to 9.8 billion karb., or 1.6 times compared to a similar period prior to the March (1965) CC CPSU Plenum.

Agricultural and livestock raising productivity increased visibly. Average yearly increase in grain production during 1965-1979 reached 13.6 million tons, sugar beets - 24.2, potatoes - 2.3, vegetables - 2.4 million tons. An increase in the yield of agricultural crops provides for an increase in production manufacture. The yield of grain crops especially increased by almost 1.7 times and reached on the average during the four years of the 10th Five-Year Plan 26.8 quintals per hectare.

Livestock raising promises an intensive and dynamic development also. An increase in the mechanization level of this branch for 1970-1979 is characterized by the following: complex mechanization on farms and neat cattle complexes increased from 13 to 47 percent, on hog-raising farms from 19 to 60, poultry farms from 31 to 80 percent. Cow milking mechanization on farms and complexes increased from 55 to 94 percent, feed distribution to neat cattle from 16 to 50 percent, for hogs from 22 to 62 percent, poultry from 46 to 95.5 percent.

Agricultural intensification with resultant feed basis strengthening, specialization and production concentration, increases in numbers of cattle, hogs and poultry provided in 1979, compared to 1965, a meat production increase of 1.6 times, milk - 1.3, eggs - two times.

All this provided an opportunity to increase agricultural product purchases, to raise the level of consumption and improve the nutrition structure of the Soviet people.

Of course, these changes did not come by themselves. They are the result of great organizational and mass-political party committee, Soviet, agricultural organ work, intensive effort on the part of kolkhoz and other workers and the intelligentsia of our republic.

In the past fifteen years, considerable social changes took place in the village. After the March (1965) CC CPSU Plenum, 6.39 billion karb. of capital investment were allocated to housing and social-cultural construction in the republic, which is 3.4 times more than in a comparable period prior to 1965, of this 2.38 billion karb. in state capital investment. Almost 94 million square meters of living space were allocated for use in rural areas with state and other sources of financing. Use of housing under state capital investment increased almost two times compared to 1965. In this period 6729 schools were built in villages with a total number of 2.1 million student places, or 1.8 times more, 7189 clubs and cultural buildings for 2 million people, and hospitals for 44 thousand beds which is 1.6 times more than in the previous fifteen year period.

Actual rural population income also increased markedly. Average monthly kolkhoz worker pay in 1979 was 2.1 times more, and sovkhoz worker pay 1.8 times more than in 1965. Pension and social insurance for rural workers has been improved.

A strengthening of the material-technical basis and agricultural intensification were accompanied by a continuous growth in the numbers of qualified specialists and machine operators. Each farm today averages 24 diploma-holding agronomists, zootechnologists, engineers and economists. Each fourth production worker is a machine operator. This is a decisive strength in the village.

The republic's agricultural workers undertook important socialist obligations for 1980. On the basis of further intensification, specialization, production concentration and soil productivity increase, it is expected that kolkhoz and sovkhoz work productivity will rise by 12 percent, that 53 million tons of grain will be raised and harvested, three million tons more than planned, the sale to the state will be not less than 1.1 billion poods.

It is important to increase the grain crop harvest in the steppe to 30-31 quintals, in the forest-steppe to 31-32 and in the woodland zone to 25-26 quintals; to harvest on the average 312 quintals per hectare of sugar beets, 18.5 of sunflower, 143 - potatoes, 159 - vegetables. The state should be sold 50 million 250 thousand tons of sugar beets. The experience of the Yampillya area people should be introduced widely to obtain from each crop hectare not less than 50 quintals of sugar; 2.5 million tons of sunflower seed should be procured as well as 3.2 million tons of potatoes, 5 million tons of vegetables, 1.7 million tons of fruit-berries. Because of a cattle head number increase and an increase in their productivity, 127 quintals of meat should be obtained from all types of farms for each 100 hectares of agricultural lands, 528 quintals of milk, and 88 thousand eggs. The state should be sold 3.7 million tons of cattle and poultry (in live weight), 14 million tons of milk; 6.5 million eggs, considerably more than last year. The feed basis will be strengthened. Procurement of 35 quintals of feed units per conditional cattle head is anticipated, 29 percent more than last year.

A further increase in the manufacture of agricultural products on private population farms will be provided for. Enterprise and organization subsidiary farms will also grow.

Today the work and thoughts of rural workers are directed towards the fulfillment of the plans and goals of the present five-year plan, to create a strong foundation for the accomplishment of the aims of the 11th Five-Year Plan. This will have an important affect on the successful conclusion of the further agricultural growth program developed by the July (1978) CC CPSU Plenum.

9443
CSO: 1811

REGIONAL DEVELOPMENT

FIFTEEN YEARS OF UKRAINIAN AGRICULTURE REVIEWED

Kiev SIL'S'KI VISTI in Ukrainian 23 Mar 80 p 2

[Figures showing progress in agriculture since 1965]

[Text] Between 1965-1979, 57.5 billion karb. of state and kolkhoz capital investment was used for the development of Ukr SSR agriculture; this is 3.9 times more than in the previous fifteen year period.

During the last fifteen years basic production of the republic's agricultural enterprises increased by 3.7 times compared to 1964, and in the beginning of this year amounted to 38.5 billion karb.

During the same period the machine-tractor yard was almost completely replaced, its power more than doubled.

Farm energy power increased from 37.6 million to 105 million horsepower, the energy equipment of one worker rose 3.7 times.

Work productivity in the village per one worker amounts to 165.5 percent compared to 1965, it is equivalent to the work economy of above 4 million people per year.

Mineral fertilizer application on the republic's farms increased from 5.5 million tons in 1965 to 16.5 million tons last year, therefore increasing three times.

In the beginning of 1980, more than three and a half thousand interfarm production enterprises, organizations and associations were active in our republic, among them 788 in agricultural production, 714 servicing agricultural production.

During 1965-1979 the average increase in grain production in the Ukraine reached 13.6 million tons, sugar beets - 24.2, potatoes - 2.3, vegetables - 2.4 million tons. The yield in grain crops especially during this period rose by almost 1.7 times and reached on the average in four years of the 10th Five Year Plan 26.8 quintals per hectare.

In 1979 compared to 1965 meat production increased 1.6 times, milk - 1.3, eggs - 2 times.

After the March (1965) CC CPSU Plenum, 6.39 billion karb. of capital investment were allocated for housing and social-cultural construction, which is 3.4 times more than for the same period in 1965.

During the last fifteen years, almost 94 million square meters of living area were put to use in rural areas through state and other financing sources.

Each farm today is allotted on the average 24 diploma-holding agronomists, zootechnologists, engineers, economists and every fourth production worker is a machine operator.

Rural population income increased markedly in the republic. The average monthly work pay for kolkhoz workers last year was 2.1 times more than in 1965. State farm workers earned 1.8 times more last year than in 1965.

9443
CSO: 1811

REVIEW OF KOLKHOZ COUNCIL WORK 1975-1979

Minsk SEL'SKAYA GAZETA in Russian 6 Mar 80 p 2

[Article: "The Urgent Tasks of Farmers"]

[Text] As we have already reported, recently there was a meeting of the representatives of kolkhoz soviets of oblasts to discuss the speech of the chairman of the republic's kolkhoz soviet and the BSSR Agricultural Minister, F. P. Sen'ko.

N. I. Dementey, secretary of the Central Committee of the Belorussian CP, spoke at the meeting.

Below is a report on the meeting, which summarized the work of the council for 1975-1979 and which determined the urgent goals of farmers.

The overall development of kolkhoz democracy, the collective discussion of the most important problems in the life and activities of enterprises, the generalization of the experience of organizing production and developing recommendations on the fullest utilization of resources--these are just some of the questions with which the kolkhoz council is involved. These new elected public organs were created over 10 years ago according to a decision by the 3rd All-Union Congress of Kolkhoz Farmers. Since that time kolkhoz councils have shown themselves to be fighting helpers of party and soviet organs regarding further strengthening kolkhozes, raising the effectiveness of public production and improving its qualitative parameters.

During the report period (1975-1980) the republic council has thoroughly studied and made recommendations on wage payments, on improving cost-accounting relations between production subdivisions of kolkhozes and on questions of improving organization and management practices. A great deal has been accomplished to raise the effectiveness of agricultural production, its specialization and concentration on the basis of interenterprise cooperation. On the basis of the recommendations of the kolkhoz council a network of specialized enterprises has been created in the republic to raise industrial and vegetable crops and perennial grasses on an industrial base. Measures are being taken for the continued concentration of production of beef and pork. The production-economical indicators of enterprises such as the Kolkhoz imeni Uritskiy of Gomel'skiy Rayon, Progress and Put' k Kommunizmu kolkhozes of Grodnenskiy Rayon and the Kolkhoz imeni Karl Marx of Logoyskiy Rayon convincingly support the advantages of concentrating the fattening of cattle and hogs in a base of interenterprise cooperation. Following their example each rayon is planning to create large enterprises to raise and fatten the public herd. By the end of the 11th Five-Year Plan half of the total beef and pork production will be concentrated in complexes and farms of the industrial type.

On the basis of the initiative of kolkhoz chairmen and members of the republic republic council, which consists of 119 persons, in the rayon more of an effort is being made to have leading kolkhozes manage those that are lagging. Examples brought up at the meeting were the Bol'shevik Kolkhoz of Kobrinskiy Rayon and the Leninskiy Put' Kolkhoz of Stolinskiy Rayon, which traditionally bore great losses and which received a clear income only in the last 2 years. They were aided by neighboring kolkhozes--Znamya Pobedy and 40 Let Oktyabrya--which are headed by members of the republic kolkhoz council A. N. Bulavitskiy and I. D. Yankovskiy.

In the 5 years under discussion alone over 22 million rubles were allocated for weak kolkhozes for the building of social-cultural structures, thus enabling us to establish 150 kindergartens and nurseries, clubs, houses of culture, cafeterias, bathhouses and other facilities.

The council did not overlook questions related to observing the model kolkhoz resolution. As a result of this most enterprises hold regular meetings of kolkhoz farmers and of the administration. People are participating more actively in the management of agricultural production, which undoubtedly had a positive effect on a more operational elimination of shortcomings and errors in work.

The republic kolkhoz council has 123 dependable helpers working in oblast and rayon centers. The councils of Grodnenskaya Oblast and Molodechnenskiy, Slonimskiy, Volkovyskiy, Gomel'skiy and a number of other rayons have had an enormous effect on the economic and social development of the village. Here there is a thorough study and discussion on questions such as economic operations, the efficient utilization of lands and fertilizers, the results of socialist competition by enterprises, their financial activities and the elimination of lags in economically-weak kolkhozes.

At the same time, as the participants in the meeting noted correctly, republic, oblast and rayon kolkhoz councils did not demonstrate the necessary degree of persistence in organizing clear control over the fulfillment of the decisions that were made. Otherwise, how can we explain the fact that most of the kolkhoz livestock-raising complexes built in 1974-1977 still have not assimilated capacities for production output? The decision to create them was opportune, but the effectiveness of operations and the return on modern structures for some reason disappeared from the attention of kolkhoz councils. For example, the calf complex for 2,750 animals in the Gorodishche Kolkhoz of Voronovskiy Rayon delivered only 5 percent of their total heifers with a classification of record-elite and elite, while over 10 percent of the animals that were sold were unclassified.

In many enterprises of the republic the basic principle of management--the return on expenditures--is infringed upon. Last year alone over 20 percent of all kolkhozes finished the year with losses and the level of profitability dropped from 19 to 14 percent. The cost of grain, milk and weight gain in livestock and hogs is increasing. Unfortunately, kolkhoz councils did not always actively become involved in this process, instead replacing a thorough analysis of the situation and specific aid by administrative measures.

At different times the republic council has made hasty recommendations on the organization of various jobs such as associations on apiculture,or representation in meat combines without considering the economic and moral losses and the removal of cadres from active work.

These and other examples were presented in the report of the chairman of the republic's kolkhoz council and BSSR Minister of Agriculture F. P. Sen'ko, as well as in the speeches made at the meeting by the chairman of the Kolkhoz imeni Uritskiy of Gomel'skiy Rayon, A. A. Potashkin, the director of the agricultural administration of the executive committee of Grodnenskaya Oblast, I. V. Grinashkevich, the machine operator of the Oktyabr' Kolkhoz of Vetkovskiy Rayon, Hero of Socialist Labor, G. M. Kotlyarev, the senior economist of the Zavety Lenina Kolkhoz of Belynichskiy Rayon, M. I. Mikhaylova, the chairman of the Progress Kolkhoz of Grodnenskiy Rayon, A. I. Dubko, and others.

The conclusion that was drawn in the speeches was the following: Time has confirmed the vitality of kolkhoz councils and has determined the fundamental directions of their activities. The most important factors were and remain the overall development of kolkhoz democracy and raising the labor activities of rural residents to seek new reserves for increasing production output and for decreasing costs. The activization of work by democratic organs of kolkhoz self-management is dependable security for a fuller utilization of the experience, knowledge and initiative of the masses.

A subject of special concern to kolkhoz councils at this time was the successful conclusion to the overwintering of livestock and to preparations for spring sowing.

It is no secret that as a result of unfavorable weather conditions last year many enterprises do not have enough forage reserves. This is why the efficient utilization of existing feeds and their feeding only in a prepared and flavored form are priority goals. We cannot tolerate a single instance of deterioration of hay or silage, or of forage losses during transport or in livestock-raising facilities. The successful completion of overwintering depends greatly on the ability of cadres to eliminate difficulties, to not tolerate a decrease in the size of the herd, to raise the productivity of farms and to preserve all offspring.

Directors and specialists must already decide what means will be used for the growth of the herd of cattle and hogs in order to unconditionally fulfill socialist obligations on the production and procurement of meat. First of all it is essential to improve the utilization of the brood herd and to secure the preservation of calves and to conclude contracts with the population immediately for the acquisition of calves from them. It should not be considered normal to slaughter calves of a small weight.

It is essential to take the most efficient measures to correct the status of hog-farming. Our goal is to produce double the number of piglets this year as last and this can be achieved only if the herd of sows is increased and if hog-raising facilities are utilized efficiently. This will enable us to sell the population a maximal number of piglets by contract for raising, with subsequent sales of the animals to enterprises and procurement organizations. Whenever possible piglets should be delivered to all subsidiary enterprises which could manage the feeding of hogs, aid should be given to private households in acquiring baby fowl and in supplying feed and conditions should be created to encourage the number of cows and especially of sows in private enterprises. Reciprocal sales to the population of concentrates for the livestock products that are sold should be widely practiced and other incentives should be employed to encourage the raising of livestock and fowl in the private sector.

The decisive means by which to secure large volumes of production and procurement of meat and fowl is the introduction of intensive methods in livestock farming and a sharp improvement in their effectiveness. During the second 6 months the enterprises in the republic should achieve weight gains of 750-800 grams for cattle and 450 for hogs. Moreover, the weight of a single animal that is sold should not be below 400-450 and 110-120 kilograms respectively. Only with this type of approach will the republic's kolkhozes and sovkhozes be able to secure the unconditional fulfillment of socialist obligations and to produce no fewer than 118 quintals of meat and 473 of milk per 100 hectares of agricultural lands.

Many years of experience and this year's overwintering in particular underscore the fact that without a well-organized grain industry it is impossible to secure the development of agricultural production and the highly-intensive management of one of its branches--livestock farming. Our goal is to collect no fewer than 32 quintals per hectare of spike crops and this year to increase gross grain yield in the republic to 9-9.5 million tons.

This requires painstaking and intense work by cadres to secure all harvest-forming factors. As emphasized at the republic meeting, within the complex of organizational-technical measures special attention must be given to the care of winter crops, in particular, the scheduled top-dressing of crops with mineral fertilizers with the aid of sowers, harrowing and cultivation to avoid lodging. The last device must be used on republic fields everywhere on the most extensive scale possible.

The sowing schedule is acquiring a special significance as never before. The time has come to move away from the antiquated practice in which the completion of sowing operations in 5-7 working days was considered a record. Sowing operations should be counted not by days but by hours. Only in this way will it be possible to truly maintain the optimal sowing schedule and to retain productive moisture in the soil. The possibilities for this exist. The republic's enterprises have a sufficient number of sowers, trailer inventory and other technology. It is important to skilfully organize the work of individuals and to mobilize them for shock labor.

The rayon kolkhoz council should place special controls on enterprises where there are traditionally low harvests of grain crops, potatoes, flax, beets and root crops. As a rule, such kolkhozes are slow to bring seeds up to high sowing condition, are late with repairing technology and with the organization of brigades and links of machine operators.

Already now it is essential to present a clear program which should be fulfilled in each enterprise of the republic to develop the feed base. The most important direction to be taken to solve this problem is the sharp improvement in the productivity of all lands that are used to cultivate feeds. In this area the well-known Kolkhoz imeni Uritskiy of Gomel'skiy Rayon is a good example. Here a hectare yields up to 60 quintals and more of feed units. The experience of this enterprise must be applied by all kolkhozes and sovkhozes.

In the course of the work of the conference it was noted that in some places the directors and specialists of enterprises complain that grains infringe upon feed crops by occupying up to 50 percent of lands within the sowing structure of land. The same Kolkhoz imeni Uritskiy was given permission on an experimental basis to utilize any type of sowing structure for fields with the purpose of supplying itself with its own feeds. As a result of 4 years of tests the optimal variant was established. It calls for grains to occupy up to 70 percent of the sowing area. This does not result in the slightest amount of damage to the development of feed production but on the contrary it strengthens it by increasing gross grain yield.

Among the priority measures needed to improve feed production the participants of the meeting mentioned the continued development of grass seed-farming, the extensive utilization of intermediate and repeat crops, the improvement of meadows and pastures, their regular sowing and an improvement in the quality of the feeds produced.

For example, kolkhozes and sovkhozes significantly decrease the nutritive value of silage and haylage while storing them in trenches. It turns out that good mass is placed into storage areas or holes with the previous knowledge that water will seep in. It is essential to store all feed in dependable lined storage and facilities should be thought of ahead of time. This is also true for the building of feed shops, without which it is now impossible to manage the livestock-farming branch intensively.

The traditional practices of organizing feed procurement also do not meet growing needs. We need purposeful year-round work by specially-created detachments, brigades and links that are supplied with the necessary technology and with highly-trained cadres.

The final year of the 10th Five-Year Plan places a specific battle goal before cadres of directors and specialists, machine operators and livestock farmers--to secure the unconditional fulfillment of socialist obligations on the production and procurement of agricultural products while considering plans the minimal level to be achieved. Here the role of kolkhoz councils will be a great one. They have been called upon to direct the efforts of each worker toward an active, creative search for reserves, improving the use of land, technology and fixed and working capital, and toward raising the productivity of labor. All of these are immediate prerequisites for successfully completing the 10th Five-Year Plan.

8228
CSO: 1824

TILLING AND CROPPING TECHNOLOGY

AGRONOMISTS LEARN OF NEW DEVELOPMENTS AT VDNH

Kiev SIL'S'KI VISTI in Ukrainian 18 Mar 80 p 2

[Article by V. Kalyta, SIL'S'KI VISTI, special corrrespondent report on: "VDNH, Academy for Millions"]

> [Text] People call the Exhibit of the National Economic Achievements of the USSR an academy for millions. There is no field here whose experience has not been studied and generalized. Agriculture is no exception. Hundreds of excursionists, participants in various subject seminars from all corners of the country borrow something new and progressive from the many pavilions at VDNH with the thought that upon returning home they can introduce it widely there.
>
> Rural workers of our republic are also well represented here. We will describe some of the new exhibits at VDNH below.

Returns of the Grain Field

"Zerne" [Grain] Pavilion. In it are collected and generalized the most valuable grains of experience in riasing winter wheat, barley, corn and othe crops in all soil-climatic zones of the country.

A group of specialists form the Belgorodskaya Oblast strive to learn everything about progressive work methods and technologies which provide noticeable harvest increase. Excursionists study the exhibits showing the achievements of workers at the kolkhoz imeni Kotovs'kyy, Bershads'koy rayon, Vinnitskaya oblast, "Zorya Komunismu", Novoarkhangelskoy rayon, Kirovogradskaya oblast, imeni Dzerzhyns'kyy, Ovidiopol's'kyy rayon, Odesskaya oblast. And not by accident: these are the farms which went above the 50 quintal grain harvest line, going even higher in winter wheat harvesting.

How did this success come about? Familiarity with crop rotations providing for the most expedient crop changes, application of scientifically proved systems of soil fertilization, introduction of the most productive, in local conditions, varieties, a complex of measures to fight pests and plant diseases. The pavilion methods specialist informs newcomers about additional exhibit materials, offers guests the specifically printed booklets, in which all "secrets" of abundant harvest experts are revealed in detail.

The Belgorodskaya oblast visitors are interested in Ukrainian plant breeding. Can the exhibit suggest to them varieties which would be effective also in their soil-climatic zones? The farmers receive detailed information on this question also.

"Myronivs'ka-25" is one of the new varieties from the Myronivs'kyy Scientific Research Institute of Selection and Wheat Seed Growing. During trial it yielded above 75 quintals of grain per hectare. It also has other valuable properties: winterhardiness, it resists lodging, brown rust and mealy dew, and has high breadbaking qualities.

Then there is "Odes'ka napivkarlykova", bred by scientists of the All-Union Selection-Genetic Institute in Odessa. During trial it yielded 59-74 quintals of grain per hectare. It ripens 2-4 days earlier than "Bezosta-1". It showed good breadbaking qualities.

Visitors were also interested in spring barley "Nosivs'kyy-9" bred at the Chernigovskaya Oblast agricultural research station. Its harvesting possibilities are 46-55 quintals of grain per hectare.

Unseen Protectors

Scientists estimate that agricultural crop pests sometimes destroy a fourth of the harvest. How should kolkhoz and sovkhoz crop fields be protected to save the harvest from losses? Both chemists and biologists are working persistently in this direction. The former create highly effective and low toxicity poison chemicals, the latter give priority to biological protection methods. In this last case, the role of plant protectors is sometimes filled by beneficial insects which are almost invisible to the eye.

For example, there is the trichogramma. Striking the egg depositories of winter crop, cabbage, and corn moth it protects many agricultural crops effectively. It was determined that 20 thousand of these little insects released per hectare of sown area in the woodland and forest-steppe almost completely destroy the winter crop moth. The additional gain obtained from preventing production losses in the fields and gardens is ten times higher than the expense of growing trichogramma. One exhibit in the "Zemlerobstvo" [Agriculture] Pavilion tells about new developments in its growing technology and release in the fields.

One can also become familiar here with the beneficial action of other invisible field protectors. The insect ageniaspys, for example, destroys the eggs of the apple moth, antokorus - moth larvae, beatles, and beneficial buzzing beatles (there are those too) destroy harmful soil inhabitants.

The exhibit points to interesting information: after the March (1965) Planum of the CC CPSU, use of biological methods completely harmless to humans and other living creatures increased by tens of times. The trichogramma alone took under its protection above 9 million hectares of crops.

The role of agricultural aircraft in protecting fields is also growing. There are no hindrances for aircraft whereas above ground technology cannot be used on all areas, in rugged terrain inaccessible to it. Use of aircraft provides also for high work productivity. Economists estimated that aircraft use on each million hectares frees more than a thousand tractors and 1500 machine operators. In addition, and equally important, it speeds up the dates for working the sown area, garden and vineyards. This, in turn, greatly increases the effectiveness of measures against pests.

The exhibit introduces the visitors to the work of the Ukrainian Scientific Research Institute of Plant Protection, especially to its developments on the use of mixtures of highly coeffective preparations and mineral fertilizers.

9443
CSO: 1811

TILLING AND CROPPING TECHNOLOGY

SOYBEAN CROP IN STAVROPOL'SKIY KRAY DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 4 Mar 80 p 2

[Article by O. Bazhenov, director of the Stavropol' Scientific Research Institute of Hydraulic Engineering and Reclamation, and Yu. Pankov, chief of the Irrigation Technology Division: "Soybeans in Stavropol'"]

> [Text] This year the agricultural workers of the kray are expanding the plantings of soybeans for grain to 8,000 hectares, and 23,500 hectares of soybeans are being grown for green mass.

Recently the attitude toward soybeans in the Stavropol' area has undergone a basic change. This was made possible by the fact that regionalized varieties have appeared in the kray and deliveries of fertilizers and equipment have increased. To guide them in their efforts, the agricultural workers adopted the directive of L. I. Brezhnev at the July (1978) Plenum of the CPSU Central Committee concerning the fact that soybeans are of the greatest importance in strengthening the livestock feed base and that it is necessary to investigate possibilities for additional planting, particularly in irrigated fields and to improve agricultural methods.

This year the production of marketable soybeans for grain will already reach 10,000 tons in the kray, and by the end of the 11th Five-Year Plan it will reach 75,000. The area planted in this valuable crop at present amounts to 8,000 hectares, of which nearly one third are irrigated. Moreover, it will be grown on 23,500 hectares to produce green mass.

The effectiveness of growing soybeans with irrigation has been convincingly proven through the experience of many farms in the kray. Following are several examples. In 1978 the Kirov Kolkhoz in Sovetskiy Rayon harvested 19.4 quintals of grain from each hectare while only 15.3 were harvested the previous year. The machine operators of the Novoaleksandrovskiy Kolkhoz "Rossiya" were very successful in harvesting 27.3 quintals of grain from every hectare.

It is particularly important to mention the "Orlovskiy" Kolkhoz in Kirovskiy Rayon where the fields became a production laboratory where many agricultural methods developed by scientists are tested. Recently, for example, our institute assisted in developing methods here of growing soybeans for grain and developing mixed plantings of soybeans and corn for silage under conditions requiring irrigation. The assistance from the kolkhoz specialists was also invaluable; they tested more than 10 varieties of soybeans, adopted different methods of planting and seeding rates and checked the effectiveness of treflan, nitragin and trace elements.

What are the results of these efforts? In recent years the grain harvest has varied, depending on the variety, from 18 to 32 quintals per hectare. The production cost of a quintal of the high-protein product has remained within the limits of 9.7 rubles and the net income per hectare has reached 350 rubles. Soybeans have turned out to be an excellent crop for rotation. When the seed is processed with trace elements and nitragin, 50 to 200 nodules are formed on each soybean plant, and corn planted after it, when treated with 3 quintals of compound superphosphate, yields a harvest of green mass amounting to 560 quintals per hectare.

In combined plantings with corn, the green-mass harvest amounted to 350-500 quintals per hectare, the yield in protein increased to 147 kg, and its content in a feed unit increased by 30 percent. In 1978, due to soybeans, the farm harvested an additional 240 tons of protein. The production cost per quintal was 96 rubles.

Experiments as well as the results of the experience of leading farms have made it possible to work out the basic problems in producing high harvest yields of soybeans under irrigation. The best crops to preceed soybeans are early grain crops, early potatoes and silage corn. The worst are sunflowers and sugar beets. On the institute farms, soybeans are planted after winter wheat. Basic preparation is directed toward combatting young weed growth, leveling the surface and improving the water characteristics of the soil.

After harvesting the grain crops the field is disked with surface plows in one or two tracks at a depth of 6 to 8 cm. In the future the soil can be prepared in two ways: either by plowing to a depth of 18-18 cm, 1-2 cultivations and late autumn plowing to a depth of 25 to 27 cm, or according to an irrigated semi-fallow system when plowing to the full depth is done 2 weeks after shallow plowing, and cultivation is done according to the amount of weeds which appear. It is important to have a level field.

In the early stage soybeans grow slowly and can be crowded out by weeds. The battle against them continues, using harrows until the appearance of the young growth. One more harrowing is done to the young growth at right angles to the rows during the period when 2 to 3 leaves appear.

The number of cultivations depends on the condition of the field. With irrigation there are usually 2 or 3 inter-row preparations and after irrigation the moisture must be covered. The agrotechnical methods are supplemented through the use of herbicides, primarily treflan and linuron.

An important resource in raising the harvest yield is the utilization of fertilizers. In an area of unreliable moisture in calcareous chernozem soils, the application of 60 kg of nitrogen and the same amount of phosphorous for 4 years produces an average increase in the yield of soybeans of 5 quintals per hectare and an increase in its protein content of 5 to 6 percent.

As is well known, the final result of a mjaority of agrotechnical methods depends greatly on varieties possessing high potential productivity. In recent years many such varieties have been created, namely, "Komsomolka," "Kazakhstanskaya-670," "Kazakhstanskaya-688," "Imeretinskaya" and others. Many new foreign varieties have also been imported and are being grown. Unfortunately, the specifics of their agrotechnology have not yet been completely studied, and the domestic varieties have a lengthy growing period. In a word, the search continues. Of particular interest among those discovered are the Moldavian varieties, "Aurika," "Bukuriya," "Bel'tskaya-25," "Khersonskaya-8," which was developed by the Ukrainian Scientific Research Institute for Irrigated Agriculture, and "Early-10," which was developed by the All-Union Scientific Research Institute of Oil-Bearing Crops.

Most common throughout the kray are plantings with row spacings of 45 and 70 cm. The seed is sown at the end of April and the beginning of May when the soil has warmed to 12 to 14 degrees at a depth of 4 to 5 cm. The best plant density with wide-row planting is 300,000 to 350,000 to the hectare and with double line planting (60 x 15) up to 400,000 to 500,000. Large planting rates are employed when growing early-maturing, low branching varieties.

During the growing period soybeans utilize 4,000 to 5,500 cubic meters of water per hectare. There are extreme irregularities in the process, namely, 20 to 25 cubic meters in May and 55 to 70 cubic meters in June. The critical period is during blossoming and seed maturation when soil moisture must be maintained at a level not lower than 75 to 80 percent of the maximum field water capacity. In an area of unreliable precipitation this requires 3 to 4 periods of irrigation at a rate of 500 to 550 cubic meters per hectare, and in arid areas 4 to 6 periods of irrigation.

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TILLING AND CROPPING TECHNOLOGY

SOYBEAN CROP IN KRYMSKAYA OBLAST DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 16 Mar 80 p 2

[Article by V. Makarenko, first secretary of the Crimean Oblast Party Committee of the Communist Party of the Ukraine: "Soybeans in Crimean Fields"]

[Text] An important question has been raised by scientists of the Lenin All-Union Academy of Agricultural Sciences in the article "Resources for Feed Protein--Into Operation," which was published in SEL'SKAYA ZHIZN' at the end of January. Indicated there are actual means to eliminate the shortage of protein components in feeds and, on that basis, to further increase livestock productivity. As is well known, this problem is becoming more and more vital, and the party is doing everything to solve it in accordance with the demands of time.

The party organization in our oblast is working in this direction. As a result, the livestock population is increasing and the productivity of cattle and poultry is rising. In addition to the total volume of sales planned for the 4 years of the 10th Five-Year Plan, the oblast has sold the state 35,600 tons of meat, approximately 49,000 tons of milk, 116 million eggs and more than 1,400 tons of wool. Last year the plans for sales to the state of livestock products were also fulfilled. The profitability of livestock production increased, although the summer was far from favorable for agriculture.

In analyzing the indicators for a corss section of the rayons and individual farms, we are convinced once again that where a firm feed base has been or is being created the production of livestock products is constantly increasing. And the opposite situation exists where this work has not been carried out reliably and according to plan. Much is lost due to inferior feeds and to insufficient attention devoted to expanding the planting ofhigh protein crops. Under Crimean conditions soybeans must occupy first place among these crops; it is a veritable storehouse of protein. But how can a key to it be found?

In 1977 a decree was issued by the CPSU Central Committee and by the USSR Council of Ministers in which the necessity of organizing soybean production in the southern regions of the European portion of the country was recognized. In his speech at the July (1978) Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev again returned to this problem. "We have recently made a decision concerning soybeans," he said. "We view it as the first step in the organization of wide spread production of this most valuable crop. It is necessary to investigate the possibilities of expanding its planting, particularly in irrigated areas, and of improving the growing method.

After the Plenum, the decisions of which the oblast party organization and all the agricultural workers accepted as a program for action, perceptible progress was noticed in the cultivation of soybeans. The agricultural workers of the "Rodina" sovkhoz of the Crimean Poultry Industry Trust became the pioneers. They established creative collaboration with the scientists of the Ukrainian Scientific Research Institute for Irrigated Agriculture and soon developed advanced methods. As a result, due to the addition of up to 30 percent soybean cake to the starting mixed feeds for poultry, only 3.5 quintals of feed units are used per quintal of added weight, while 5 quintals were planned.

It cannot be said that the oblast's soybean fields began to increase immediately. However, last year they already covered 6,800 hectares and the harvest from each of them was relatively good, an average of 17.9 quintals. It is true that soybeans do not yet occupy their proper position in the grain fodder balance, however, there are already examples worthy of emulation. I cannot avoid citing the results of the work of the livestock breeders in Krasnogvardeyskiy Rayon where last year approximately 700 quintals of milk and 200 quintals of meat per 100 hectares of agricultural land were produced. The basis for their success was largely soybeans; more than 2,000 hectares are planted and an average of 25.6 quintals of beans were produced. The highest harvest level was achieved at the "Krasnoarmeyskaya" poultry plant, namely, 30 quintals per hectare. On the kolkhoz "Druzhba narodov" each of the 470 hectares of the first planting produced 18.6 quintals. The cultivation method for this valuable crop was mastered excellently here by the machine operators A. Mart'yanov, A. Danil'chenko, Z. Drob, I. Piletskiy, A. Pinchuk and by many others.

The experience of the machine operators on the "Rossiya" kolkhoz is also exemplary. In the difficult year of 1979 every 100 hectares of agricultural land produced 1,028 quintals of milk and 177 quintals of meat and the daily yield per cow exceeded 10 kilograms even during the winter. And much of this was precisely the result of soybeans which covered 500 hectares. Half of these were included in the first planting which produced almost a 30-quintal harvest. Each hectare of the second planting yielded 14.5 quintals of beans. The entire first planting was carried out by the mechanized unit led by communist Anatoliy Barkhatov. The work is not done poorly in Sovetskiy Rayon and there are bits of advanced know-how on the Kirovskiy farms also, for example, on the Krasnaya Armiya Kolkhoz. All this bears witness to the presence of great resources for increasing the production of plant protein. The efforts of many workers in Crimean agriculture are now directed toward the search for and utilization of these resources.

More attention is now being devoted to spreading this advanced know-how. The pages of the oblast and rayon newspapers and radio and television programs are constantly discussing the rayons, farms, brigades and units which have been successful in the production of soy beans. Critical presentations are also not avoided. Practical seminars provide a great deal. Schools for advanced know-how have been created on the basis of the oblast agricultural experiment stations and in individual rayons, in which scientists of the Ukrainian Scientific Research Institute for Irrigated Agriculture and of the Crimean Agricultural Institute take an active part. Due to the collaboration of these scientific and skilled workers, a specific method has been worked out for the cultivation of soybeans, a unique example of which is the experience of the kolkhoz "Druzhba narodov."

This farm is the leader for agricultural production in our oblast. Here the motto "Look after feed as for grain" is adhered to and the correct path toward solving the problem of feed protein has been taken. The necessity of growing soybeans has been prompted by life itself; the farm has 16,000 head of cattle including 4,200 cows and the largest broiler plant in the country is in operation. It is true that its supply of mixed feed is centralized, however, it is far from being always balanced with respect to protein and the kolkhoz has had to supplement the feed with soybean protein.

Following are the results. Whereas in 1971 the average yield of milk per cow amounted to a little more than 3,200 kilograms, last year when soybean cake was utilized the yield exceeded 3,800 kilograms. Only the so-called started feed is enriched for feeding broilers from the age of one day through 29 days when the need for protein is particularly high. The addition of approximately 30 percent soybean cake to the mixed feed in this situation increases the average daily increase in chick weight from 17 up to 22 grams. It has been determined that a ton of soybeans in broiler production feeds produces an additional ton of meat.

Here is yet another important moment from the experience of our oblast's farms. Until now there has not been a common opinion even among the representatives of science concerning the method of utilizing soybeans for livestock feed. Some maintain that the fat should be left in it and after thermal processing the beans should be ground into flour and added to the feed in this form. They claim the milk has greater fat content. Such a method is incorrect and is only for the negligent since it releases them from extra concerns. Others complain of the lack of special presses for squeezing out the oil, which is also without justification. Our farms have adapted normal oil mills and remove 10 percent of the fat from the soybeans while the remainder stays in the cake. Experience has shown that this quantity is fully sufficient for producing high-quality milk. The sale of the oil at state prices covers all the expenses in growing soybeans.

As is well know, soybean fields in the south produce greater yields with irrigation. It is true that there are years when it is possible to achieve good harvests in the dry areas, but one cannot count on chance success. With irrigation it is always possible to find space, even if it becomes necessary to push several crops together. It is not easy to do this; soy beans are not established in the crop rotation. Grain fields cannot be cut back, nor can sunflower fields. Yet this "old inhabitant" of the Crimean steppe could be replaced to a certain degree by soybeans. Under the conditions of the oblast it produces the lowest harvest in the republic.

As concerns the varieties of soybeans, there is unfortunately only one regionalized variety in the Crimea, "Kirovogradskaya-4," which is still in state testing. More promising has been the foreign variety "Hudson," which produced an average of 33.2 quintals of beans from each of 77 hectares and ripened 3 weeks earlier than "amsoya." One of the varieties developed by the Ukrainian Scientific Research Institute for Irrigated Agriculture showed itself to advantage in producing 30.2 quintals of beans per hectare and in being able to tolerate the area's growing season.

A few words concerning second plantings are in order. This is an enormous resource in yielding additional products from the same fields and is a means of increasing the output of an irrigated hectare. Soybeans are planted as a second crop after the harvest of winter crops for green chop for livestock and for silage, which are usually a cereal-pulse mixture.

There are still many difficulties and unsolved problems. Herbicides, particularly treflan, are needed for putting the industrial method of growing soybeans into operation. The chemical industry must produce that or a similarly effective preparation in sufficient quantities. Somewhat problematic for us is the question of early maturing and high yielding carieties of soybeans. Two or three such varieties are necessary so that the irrigated fields produce two harvests per year and work throughout the summer. It is very important in growing soybeans to level the fields very well so that highly productive utilization of equipment can be achieved and losses can be eliminated. This means that the appropriate graders, special planters and combines which do not harm the beans are required. The machine builders must set up the production of these machines as soon as possible. Further expansion of planting is senseless without well organized seed growing.

Of course, the problem of feed protein in the Crimea is not being solved only with soybeans. Also being expanded are the planting of alfalfa, sainfoin and cereal-pulse mixtures. And yet, in creating a solid and valuable feed base, soybeans are given particular attention. While at first we planned to expand its plantings to 10,000 hectares, due to initiative from below it became necessary to correct this figure; today soybeans will occupy more than 15,000 hectares. Organizational and agrotechnical measures have been worked out which are directed toward guaranteeing high harvests. This valuable crop is gaining its proper place in Crimean fields with ever greater certainty.

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TILLING AND CROPPING TECHNOLOGY

SOYBEAN CROP IN SOUTHERN KAZAKHSTAN DISCUSSED

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 2, Feb 80 p 17

[Article by S. Baydil'dina, graduate student in the Kazakhstan Agricultural Institute: "Soy Beans--An Advantageous Crop"]

[Text] Soybeans yield abundant harvests on irrigated fields. For example, on the "Chemolganskiy" Kolkhoz in Alma-Atinskaya Oblast the yield amounted to 20.1 quintals per hectare, while the yield of pulse crops was only 12.1 quintals. Up to 18.1 quintals are produced on the Alma-Atinskiy tobacco sovkhoz and up to 21.9 quintals per hectare on the "Oktyabr'skiy" Sovkhoz. The high crop yields have facilitated expanded plantings of this crop; they have doubled on the Alma-Atinskiy tobacco sovkhoz. This crop is becoming more and more widely accepted.

Success in introducing soybeans in different zones depends greatly on the level of productivity and the reliability of the variety selected for the different zones. An adequate amount of moisture is also an important condition in achieving high crop yields. Soybeans grow and develop well in chernozem and brown soils of various textures. And, on the contrary, do poorly in alkaline, saline, highly acid, sandy and heavily compacted soils. Highly recommended for the irrigated, foothill area of Alma-Atinskaya, Chimkentskaya and Dzhambulskaya Oblasts are the tall varieties of soybeans--Hybrid, Kazakhstanskaya-4, Kazakhstanskaya-200 and Kazakhstanskaya-688.

Farm experience has established that the highest harvest levels are achieved when soybeans are preceded by crops which remove weeds and leave low amounts of nitrogen in the soil. One such crop in particular is winter wheat.

Soybeans are the best crop to precede corn, sugar beets and a number of other crops because the roots have rhizobia which allow it to fix up to 30 kilograms of pure nitrogen per hectare, a portion of which remains in the soil after harvesting.

The best method of soil preparation is deep blade, autumn plowing. On the leading farms, if the top soil layer permits, the plowing depth reaches 27 to 28 cm or more. On the "Alma-Atinskiy" Sovkhoz, for example, with such soil preparation the soybean harvest has reached record levels of 50 quintals per hectare from individual fields. On this same farm the light brown, very dusty soils are cultivated not just once, but several times before sowing with soybeans. As a result, the soil moisture is higher than after one cultivation before planting.

The concentration of sowings in specialized brigades and farms will undoubtedly lead to further increases in the effectiveness of soybean production. Insufficient attention is being paid to this at the present time. For example, in 1978 80 farms were engaged in growing soybeans. On the average, each of them planted 57 hectares of this crop. Of these, 8 had small soybean fields of 10 to 15 hectares. The concentration of plantings on the farms of Taldy-Kurganskaya and Kzyl-Ordinskaya Oblasts was at a particularly low level. As experience has confirmed, such dispersion of soybean fields reduces the possibilities of employing full mechanization, advanced methods of agricultural technology, recommendations of scientific organizations and the experience of leading farms.

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TILLING AND CROPPING TECHNOLOGY

SOYBEANS INTRODUCED IN GEORGIAN AGRICULTURE

Moscow SEL'SKAYA ZHIZN' in Russian 23 Mar 80 p 1

[Text] The farms of Georgia have begun sowing soybeans. The workers of the republic Scientific Research Institute for Agriculture have gone to the fields with the machine operators; they will help the field workers master the cultivation methods for this crop.

The family crew of I. Strochak from the kolkhoz from the "First of May" village in Abashskiy Rayon has first place in the sowers competition. It is the first in Georgia to introduce industrialized agricultural technology for soybeans following the example of the Kuban agricultural workers. Last year the production team achieved an additional harvest of 10 quintals per hectare. This year mass competition has developed throughout the republic to achieve high harvest levels.

Soybeans are grown in 37 rayons in the republic. Scientists have created high-yield varieties of this crop for each of them. For example, for the subtropical areas "Kolkhida-4" and for the mountainous farms "Mutant-2" have been developed. The latter yields a high harvest level in both grain and green mass from fields located at an altitude of 1,000 to 1,200 meters. In total, Georgian scientists have developed 8 new, high-yielding varieties of soybeans. Five of them are regionalized.

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INCREASED SOWING OF RYE URGED IN KIROVSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 22 Mar 80 p 2

[Article by G. Fominykh, chairman of the "Novyy put" kolkhoz in Khalturinskiy Rayon, Kirovskaya Oblast, in the column "Build Up Grain Production": "Northern Grain"]

[Text] Our party has always attached exceptional significance to grain production. And this theme was discussed at the July (1978) Plenum of the CPSU Central Committee: not only quantity, but quality and expansion of the assortment as well. Comrade L.I. Brezhnev stated: "Even greater attention must be paid to the cultivation of millet, buckwheat, rye and corn as grain. A number of farms obviously underestimate the value of these crops."

This remark about rye relates primarily to the farmers of our Kirovskaya Oblast, where up to a million hectares used to be devoted to this valuable food crop, and this area was the largest in the Russian Federation. Then, for one reason or another, the area planted with rye was reduced on many farms.

True, the late spring, rainy summer months, and early frosts of recent years have forced many economic planners to change their attitude toward rye. The summary of last year's agricultural work was particularly pleasing: an area of 580,000 hectares was sown with rye for grain in good periods. Count it--this means a half-million tons of food grain are already in the granary. And if you judge by the productivity of kolkhozes and sovkhozes which have not yet unlearned the art of caring for rye, then there will be a full million tons!

Isn't this impressive! Let me cite an example from our farm. In 1977 we gathered 18 quintals of rye from each of our 500 hectares; in 1978-18.7 quintals, and last year-23.5 quintals. This growth occurred thanks to the fact that 3 years ago, for the first time in the past 2 decades, we acquired the possibility of fertilizing the rye fields with mineral fertilizers. We began to handle fallow fields better, dressing them with 80 tons of organic fertilizer per hectare. And the harvest taken on such tracts exceeded the 30-quintal mark. That means it is our duty to "resurrect the

the glory of rye" in a practical sense, to concern ourselves daily not with how to get rid of it, but rather with how to make it the equal of the spring crops. There are incentives to do so: the government has set very advantageous terms for the sale of rye to the state.

For several years now we have been sowing rye using only seed from the revolving stock. Starting in the fall we prepare it in great quantity and carefully monitor its preservation. We do not forget that the spring-summer period is particularly dangerous; then the seeds sprout, and as they do so, microorganisms, ticks and other vermin intensify their activity.

We sow only seed material that comes from special crops grown on clean fallow. Experience has shown that if winter crops go in after the cereal or perennial grasses--and this is true of occupied fallow as well--damage from root rot cannot be avoided. This has been particularly experienced in the past few years, which have been extremely cold and damp.

Many farms in both our rayon and oblast have still not succeeded in overcoming an entrenched and pernicious tradition--sowing freshly harvested grain, and, moreover, in haste, in violation of the requisite agrotechnical periods. And the shoots come up sparsely, without acquiring spring hardness or developing a root system; they die from frost in the winter. Besides that, a higher norm has to be used for the seeding, since it is difficult to compute the normal one for this period. As a result the harvest decreases by a quarter or even by a half.

Many dissatisfied with the highly "stalky" nature of rye (we refer to the Vyatka variety) and its tendency to lodge. But it is our own negligence that causes these negative qualities to be manifested! We sometimes dispense so muce nitrogen fertilizer that not just rye, but any grass would lie on the ground.

Now, we do not misuse notrogen fertilizers at our kolkhoz; we attempt to do more organic fertilization of fallow fields and have learned how to correctly use TUR. Earlier we also used this preparation, but too late, when the plants were already entering the ear-formation stage. In other words, they were strengthening not the lower but the upper internodes, and lodging was inescapable. Now we treat the sowings as they begin shooting, which yields good results.

Rye comes to our aid in any meteorological conditions, assisting us above all in successfully meeting our state grain procurement quota. During the last five-year plan we exceeded the plan by a factor of 1.5 in this regard; during the current five-year plan we will double the planned figure. Rye constitutes 50 percent of our grain sold.

And still we are not using all our reserves to increase the production of good crops. One of the reasons for this is that the rayon planning organs constantly demand that the area sown with cereal crops be increased. Of course, we are carrying out this directive, but where will this area come from? From clean fallow.

Wouldn't it be better for them to direct their attention to the issue of raising the productivity on those farms where the yield is only from 6 to 15 quintals per hectare? In this case we could increase rye coverage to 600 hectares, sow it all on clean fallow, and increase grain sales to the state another 1.5-fold.

In the last few years thanks to purposeful work by the oblast Party organization and agricultural organs, much has been done to "resurrect the glory of Vyatka rye." Last year, as was noted at the oblast conference of exemplary agricultural workers, not just a few but many farms in the Vyatsko-Polyanskiy, Kuzmenskiy, Kirovo-Chepetskiy, and a number of other rayons harvested 30 quintals per hectare from large areas. The overall yield for the oblast grew, too. And if we increase the proportion of rye in the seeded area to 40 percent, the oblast will acquire tens of thousands of tons of first-class grain without special additional expenditures. A 32 year term as chairman of the kolkhoz and concern about the crop that is traditional for our krays oblige me to express such an opinion.

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TILLING AND CROPPING TECHNOLOGY

SPRING MAINTENANCE OF RYE CROP DESIRED

Moscow SEL'SKAYA ZHIZN' in Russian 2 Apr 80 p 2

[Article by L. Kedrova, director of the winter wheat laboratory of the Northeast Agricultural Scientific Research Institute, and V. Shalayev, director of the Falenskaya Selection Station in Kirovskaya Oblast, in the column "Build Up Grain Production": "Spring in the Rye Field"]

[Text] Properly organized care of the young crop in the spring is one of the factors involved in increasing the yield of winter rye. During this period the plants experience a particularly acute demand for nitrogen, and, therefore, are very responsive to fertilization with it. A very important agricultural technique is the additional fertilization of partially thawed soil with 30 to 50 kilograms of the active agent per hectare. The favorable periods for this work are rather short, but accurate, well planned preparation can be of assistance here. There is still time.

Additional root fertilization of the young crop with a disc-type sowing machine is the most effective method. Experiments conducted at our institute and on farms show that nitrogenization done with a sowing machine to a depth of 3 to 4 cm yields double--or even more--the incremental addition to the harvest achieved with the same expenditure of fertilizer applied by the spreading method.

The seedlings develop better if the additional fertilization is accompanied by harrowing as the soil is prepared. This prevents loss of moisture, rids the sprouts of dead foliage, and decreases the harmful effects of snow mold and Sclerotinia. The experience of the Falenskaya Selection Station of our institute indicates that even in years when snow mold harmed the young crop very severely, timely additional fertilization and harrowing restored all the plants, and the rye strain Vyatka-2, yielded 35 quintals of grain per hectare. In areas where no harrowing was done--even when the full amount of fertilizer was used--the yield did not exceed 10 quintals.

Harrowing of the seedlings should be done crosswise to the rows or diagonally, behind one another: among well thickened sprouts--with a hitch of middle-sized harrows, and among less thickened sprouts--with light harrows. The speed of the units must be reduced. We should warn that the optimal period for doing the work is 3 to 5 days, since both early and late harrowing leads to a reduction in the harvest.

The Kirov kolkhoz in Falenskiy Rayon conducted timely and additional fertilization of all the rye seedlings during an outbreak of snow mold in 1976; as a result, a second inspection of the sprouts revealed no visible difference in plant development between damaged and undamaged sectors. That year an average of 17.4 quintals of grain was harvested from 2000 hectares, while neighboring kolkhozes and sovkhozes hammered out an average of but 8.6 quintals. The next year there was just as much snow mold and damage to the seedlings, however, timely measures again helped to maintain a 19 quintal harvest, although many farms had to practically resow their winter crops.

This year, as a result of abundant snowfall and a comparatively mild winter, conditions very conducive to the above mentioned afflictions were created in many places; therefore, specialists have to be particularly attentive in their spring inspections.

Slow dissipation of the snow cover has a pernicious effect on plant damage caused by snow mold. Thus, in our experiments a delay of 10 to 15 days in the melting of snow, compared to the normal times, led to the death of every fifth sprout. This is why mulching the winter crops with peat or phosphorite meal or dispensing two to three quintals of potassium salt per hectare has a positive effect. It is particularly important to conduct this work on fields that border on woods and lowlands.

In order to reduce the consequences of plant heaving we pack the seedlings, as a rule, with ring or ribbed rollers, which promote the development of additional roots by pressing the tillering nodes to the soil. In stock sowings, in case of sprout sparseness in the fall-winter-spring period, we sow additionally with red clover. We sow using a borad-row sowing machine and dispense a rate of six to eight kilograms of seed per hectare.

As is well known, the strains of rye with high resistance to the cold, in particular Vyatka-2, often lodge when the yield exceeds 20 quintals: the straw cannot support the weight of the ear. To avoid this we treat the sowings with TUR. The optimal dosage for this preparation is 4 kg of the active agent per hectare. The treatment is done when the plants begin shooting.

Although many of the specialists regard this agricultural method with a certain distrust, we are convinced that it not only promotes resistance to lodging, but improves the quality of future seed material too.

The concern about seed in the revolving stock must also be listed as a spring concern of first-rate importance with regard to the winter fields. Of the methods for pre-sowing preparation of the seed material in the revolving stock, chemical disinfection has the greatest effect; it should be done between April and the beginning of June. During this time the temperature of the seed increases, and sometimes its humidity as well, which noticeably intensifies the development of microorganisms. Therefore, their timely extermination permits us to improve preservation of the seed in the summer period. However, we must bear in mind that we cannot ventilate the decontaminated seed; it must be kept packed and in a separate, isolated repository.

The seed in the revolving stock is the basis for a good future harvest, but the advisability of using it must be decided by taking into account the quality of the new harvest's seed material and the conditions under which it was shaped, particularly if the seed was sown in a climatically unfavorable year. If the revolving seed reserve contains many puny, traumatized little kernels damaged by disease and have inadequate germination power, then preference should be accorded to newly harvested seed. It is precisely for this reason that it is important today to inspect each lot of seed sown and, based on an analysis, make changes in the technology for conducting spring maintenance of the sowings, stressing those sectors from which grain may be used for seed in the fall.

For decades winter rye has come to the aid of farmers in our zone in any kind of year, whatever the weather. It will suffice to say, for example, that in Kiroskaya Oblast over the course of almost the last 10 years the proportion of rye in the total grain yield has been more than 40 percent, and sometimes even a good half. Over the last 2 years in particular the productivity of the winter-rye fields in the oblast as a whole has been greater than that of spring rye. In many farms using large areas rye yields from 30 to 40 quintals of grain per hectare. And everything possible should be done to ultimately "resurrect the glory of northern grain."

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CSO: 1824

TILLING AND CROPPING TECHNOLOGY

REGIONALIZED SPRING-VETCH VARIETIES DESCRIBED

Kiev SIL'S'KI VISTI in Ukrainian 3 Apr 80 p 2

[Article by O. Ryeznik, deputy director, Ukrainian Scientific Research Institute of Agriculture, V. Sydorchuk, head of the Grain and Grain-Pulse Selection Department, Bilotserkva Research-Selection Station on: "Spring Vetch Seed Production"]

[Text] Spring vetch takes the lead among the pulse annuals raised for cattle feed in the forest-steppe zone. Its mixtures with oats provide 300-350 quintals of green mass per hectare, or 55-60 quintals of hay. It is a good predecessor for winter crops. But because there is a shortage of seed, farms, on the average, have only about 50-60 percent of seed for sowing feed mixtures. In unfavorable years there is only enough available for seed production.

In recent years scientific research organizations of the Kiev selection center bred a series of varieties which provide for an abundant harvest and seed productivity. "Bilotserkivs'ka-222" regionalized between 1975 and 1977 in Kievskaya, Khmelnitskaya, Zhitomirskaya, Rovenskaya and Chernovitskaya oblasts, did especially well. Data collected over five years of variety testing in Kievskaya Oblast show that it supercedes "Bilotserkivs'ka-27" in seed yield by 6.6 quintals per hectare with a harvest of 23,8 quintals. This variety withstands overmoistening in the second half of the vegetative period, which has a decisive meaning in certain years for obtaining seed.

In 1979-1980 the "Bilotserkivs'ka-623" was regionalized in Poltavskaya, Cherkasskaya, Vinnitskaya, Sumskaya, Ivano-Frankovskaya and Dnepropetrovskaya oblasts. Next year in the Volynskaya Oblast, a new variety "Bilotserkivs'ka-33" will be regionalized, which in the two years of testing superceded "L'hovs'ka-31-292" in seed productivity. "Vinnyts'ka-30" bred by the Vinnitsa research station was regionalized in 1977 in the Kharkovskaya oblast.

But the areas allotted to these varieties are too small and cannot provide the required amount of spring vetch seed. For example, out of 100,000 hectares of crops last year new varieties were sown on 9,600 hectares. This indicates that in the process of variety change new variety seed is not utilized rationally. Part of the elite in the first or second reproduction is fed to the cattle on some farms. To introduce new spring vetch varieties into production quickly, the Bilotserkva Research-Selection Station releases a small amount of seed directly to seed producing farms of the first category. For the 1980 harvest, 20 kolkhozes and sovkhozes in the Vinnitskaya and Sumskaya oblasts will receive seed of the "Bilotserkivs'ka-623" variety. This year a marked increase in the production of the original spring vetch seed of Bilotserkivs'ka varieties and "Vinnytska-30" is expected in order to satisfy more fully the needs of scientific-research organizations and the republic's farms.

What needs to be done to provide guaranteed spring vetch seed harvests and to introduce new varieties into production faster?

Experience in working with this crop over many years, especially at the Bilotserkva Research-Selection Station indicates that only unmixed sowing of spring vetch can provide for a steady seed harvest. From an unmixed sowing at this station (over an area 40-50 hectares) in the last four years on the average 18 quintals of seed were harvested per hectare. A high yield may be obtained only by sowing within very early and early dates. Plants, then, find themselves under the influence of low temperatures and form a small vegetative mass. This favors the increase of seed productivity.

One of the reasons for a harvest decrease is thickened crops. A sowing norm of 1.5 million sprouting seeds per hectare is considered optimal. It can be reduced to 1.2 million seeds over good predecessors. Spring vetch branches out well, therefore it can be sown for seed also through the thinned row method with a norm of 0.8 million seeds per hectare and in wide rows-0.5 million seeds per hectare. Fifteen-twenty quintals of seed per hectare may be harvested this way.

To destroy weeds, areas under spring vetch are harrowed prior to shoot appearance and early after shoots appear. The herbicide Linoron (Afalon) may be applied to the crop. It is applied after sowing, 2-2.5 kg of the preparation per hectare.

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TILLING AND CROPPING TECHNOLOGY

METHODS FOR IMPROVED SUNFLOWER CROP EXPLAINED

Kiev SIL'S'KI VISTI in Ukrainian 3 Apr 80 p 2

[Article by Ye. Kaptylov, non-staff inspector, oblast peoples' control committee; M. Tonkovs'kyy, chairman of the peoples' control group kolkhoz imeni Shevchenko; F. Butchenko, SIL'S'KI VISTI special correspondent: "He Who Has a Poor Sunflower Harvest"]

[Text] Kolkhoz imeni Frunze is one of the progressive farms of the Zaporozhskyy Rayon. Regardless of weather conditions high, steady yields of agricultural crops are harvested on its fields, especially sunflowers. Last year was no exception. Although the summer was without rain, workers were able to raise a high yield of this valuable oil crop. The farm overfulfilled its planned sale ot the state. The production prime cost was lowered. Profitableness rose to 164 percent. What contributed to the success?

First of all, kolkhoz workers utilized the scientific achievements and progressive work methods generalized at the All-Union and republic's exhibits of national economic achievements. At the VDNH Ukr SSR the experience of farms in the Mar'yinskoy Rayon, Donetskaya Oblast, was useful to them. Frunze workers borrowed from the Mar'yinskoy Rayon workers methods of determining fertilizer doses essential for the formation of the programmed harvest, and other progressive agromethods. Crop raising technology was improved with the most recent developments in mind. Its basic elements follow.

Frunze workers sow sunflowers after winter wheat. Under the predecessor 35-40 tons of organic fertilizer was applied per hectare and a full norm of mineral fertilizer immediately under the sunflowers. If the area had not been treated sufficiently with mineral fertilizer in the fall, ammonia water is applied in the spring.

To utilize fertilizers effectively, they make sure there is enough soil moisure and that it is rationally used.

Last year's sowing was done in three and a half days. Seed was covered somewhat deeper than usual with moist soil and the field was immediately compacted with rollers. This provided even, uniform shoots, assuring good plant growth until the beginning of dry winds.

In kolkhozes "Druzhba", imeni Ordzhonikidze, imeni Illich where they also carefully observed scientific recommendations and progressive experiences, and applied progressive technology to withstand the whims of weather, a good sunflower harvest was also obtained.

The picture is quite different on those farms where agrotechnology is commonplace and old working methods are followed.

For example, at kolkhoz imeni Shevchenko, whose fields border with the Frunze fields, only 13.1 quintals of sunflower seed were harvested per hectare.

When asked what new technological methods the workers use, local managers and specialists provided no definite answers. An analysis of the situation showed that it could not have been otherwise. Not only is there no interest here in scientific achievements and progressive branch experience, but even elementary agrotechnological requirements are not adhered to. It was planned to sow sunflowers over 500 hectares primarily after winter wheat. But, in the spring they decided to use 300 hectares of this area for other crops. Because of this unwarranted change in plans the oil crop was allocated after various (not better, of course) predecessors. Other blunders were also allowed.

When most other farms in the rayon had finished sowing, at the kolkhoz imeni Shevchenko this work was only started. Sowing was done any old way, seed was covered at varying depths, mostly in dry soil and this led to crop thinning. Prior and after shoot emergence the fields were not harrowed. Interrows were loosened only once. The whole plant area was not top dressed. All of those shortcomings led to a marked harvest shortfall. From each hectare they harvested a little over six quintals of seed less than at the neighboring kolkhoz imeni Frunze.

Kolkhoz imeni Shevchenko is not the only one in the Zaporozhskoy rayon. Inattention to scientific recommendations and progressive experience led to the fact that at the kolkhozes imeni Tel'man, "Shlyakh Kommismu" and others a lot of production was lost. For the same reasons half as much seed was harvested at sovkhoz imeni Lomintern that at the neighboring oblast state agricultural research station.

Specialists and machine operators from farms with little success in raising sunflowers for more than a year had an opportunity to visit the VDNH USSR and VDNH Ukr SSR and learn about new developments.

What does the rayon agricultural administration have to say about it? Its workers generalized the experience of progressive farms; a plan was put together for every kolkhoz and sovkhoz to introduce prospective scientific news and experience. But, unfortunately, they were not able to provide for a control of the planned measures.

It was revealed that people were appointed to be responsible for both the introduction of scientific achievements, and also progressive experience. However, neither of these comrades, specialists of rayon agricultural administration, kolkhozes and sovkhozes, ever reported on this situation. Measures planned remained on paper only.

It is to be expected that this year a change will be made in the Zaporozhskyy Rayon in this important matter.

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NEW BUCKWHEAT VARIETIES PROVIDE HIGHER YIELD

Kiev SIL'S'KI VISTI in Ukrainian 18 Mar 80 p 2

[Article by T. Arkushenko, RATAU correspondent on: "For the Buckwheat Field"]

[Text] The buckwheat fields of the republic have been provided with a variety sowing material. Farms prepared almost 370 thousand quintals of seed, 50 thousand quintals more than last year.

Fulfilling the July (1978) CC CPSU Plenum decision, rural workers are trying hard to increase the production of cereal crops. In the last two years, for example, they regionalized seven of the more productive varieties. Today kolkhozes and sovkhozes will obtain thousands of quintals of additional production from the introduction of buckwheat of the "Kyyivs'ka" variety bred by plant breeders at the Ukrainian Scientific "Shatylivs'ka 5" variety; record grain harvest from research fields reached around 39 quintals. It has also other positive factors, plants are resistant to drought, the large, even grain has good technological and cereal qualities. "Kyyivs'ka" variety began its road towards wider field use in two oblasts - Kharkovskaya and Sumskaya.

For the present sowing in the republic, 13 varieties of "Polis'kyy rys" have been prepared. Rural workers studied the technology of raising new plant breeding varieties and progressive measures and methods of work organization practiced by farms of the Nizhynskyy rayon, Chernigovskaya oblast, where every year, regardless of weather conditions, an abundant harvest is obtained of this valuable cereal crop.

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FERTILIZER TYPES DESCRIBED IN AD

Kiev SIL'S'KI VISTI in Ukrainian 13 Mar 80 p 4, repeated 23 Mar 80 p 4

[Ukrainian Cooperative Trade advertising brief on fertilizers: "For Abundant Harvests"]

[Text] Mineral fertilizers applied to the soil enrich it and this improves and accelerates plant ripening.

Each fertilizer has its purpose:
Amofos--is a complex nitrogen phosphorus fertilizer. It is used on any soil for top dressing various crops.

Ammonia Sulphate is a nitrogen fertilizer, it dissolves well in water. It is applied to various soils in cultivating vegetable and berry crops. It is particularly effective for top dressing potatoes.

Nitrofos is a fertilizer containing nitrogen and phosphorus. It is used over various soils under fruit trees, berry beds, vegetable crops and flowers.

Superphosphate--a phosphorus fertilizer which dissolves well in water. It is used on any kind of soil under different crops. It is most effective for raising vegetable and fruit-berry crops.

Mineral fertilizers Amofos, Ammonia Sulphate, Nitrofos and Superphosphate may be bought in consumer cooperative stores "Hospodars'ki Tovary" [Farm Goods].

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